

REMARKS

This communication is a full and timely response to the aforementioned final Office Action dated March 18, 2008. By this communication, claim 1 is amended, and claims 50-52 are added. Claims 2-9 are not amended and remain in the application. Thus, claims 1-9 and 50-52 are pending in the application.

Reconsideration of the application and withdrawal of the rejections of the claims are respectfully requested in view of the foregoing amendments and the following remarks.

I. 35 U.S.C. § 102 Rejections

Claims 1-3 and 6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Bonneau et al. (U.S. 6,002,794, hereinafter "Bonneau"). Without acquiescing to this rejection, independent claim 1 has been amended to emphasize distinctions between the claimed invention and the applied references. Applicants respectfully submit that the claimed invention is patentable over the applied references for the following reasons.

The amendments to claim 1 are supported throughout the specification and drawings. See, for example, paragraphs [0083], [0085], [0086], [00133], [00158], [00161], [00163] and [00164] of the specification.

Applicants respectfully submit that Bonneau does not disclose or suggest all the recited features of claim 1. In particular, Applicants respectfully submit that Bonneau does not disclose or suggest processing an image at a second resolution to identify an object in the image at the second resolution, and processing the image using the object identified in the image at the second resolution to identify another object according to a detection algorithm selected from among plural detection algorithms based on a condition associated with the object identified at the second resolution, as recited in claim 1, for at least the following reasons.

Claim 1 recites a method for identifying objects in an image. The method of claim 1 comprises receiving an image with a first resolution. The method of claim 1 also comprises processing the image at a second resolution to identify an object in the image at the second resolution. The method of claim 1 also comprises processing the image at the first resolution using the identified object to identify

another object according to a detection algorithm selected from among plural detection algorithms based on a condition associated with the object identified at the second resolution. Claim 1 recites that the first resolution is higher than the second resolution.

The Office alleged that the features of claim 1 are disclosed in Figure 13 of Bonneau. Bonneau discloses an encoding technique for processing an original, unencoded signal that is to be encoded and compressed. With reference to Figure 13, Bonneau discloses that an image 1301 is divided and processed according to three different resolutions (scales). Scale one, which has the highest resolution, corresponds to image 1307. Scale two, which is lower than the resolution at image 1307, corresponds to image 1305. Scale three, which is the lowest resolution, corresponds to image 1303 (see Column 21, lines 29-38). Images 1307, 1305 and 1303 are processed independently at their respective resolutions to perform edge recognition at the various resolutions.

The shape recognition technique illustrated in Figure 13 of Bonneau is utilized in conjunction with the pattern recognition process illustrated in Figure 10. The process of Figure 10 is utilized for pattern recognition based on chain coded blocks. The chain coded blocks identify the outside edges of separate objects (see Column 18, lines 36-43). Step 1005 of Figure 10 matches image points across various scales using the Holder exponent h from equation (13) to eliminate noise for an object. In step 1007 of Figure 10, Bonneau discloses that an object with a Holder exponent h of a predetermined value is preserved, while image parts having a Holder exponent h less than the predetermined value are not preserved (see Column 20, lines 25-49). Accordingly, Bonneau discloses that an image part with a predetermined Holder exponent value h is compared against a stored image so that only clearly defined edges are preserved.

As illustrated in Figure 13 of Bonneau, images 1309, 1311 and 1313 consist of a plurality of chain coded blocks for detecting edges of objects within the image, such as eyes, a nose and hair. The Office asserted that one or more blocks in image 1311 constitute an "object" at a second resolution, and one or more blocks in image 1313 constitute "another object" at a first resolution. Using this logic to arrive at the subject matter of claim 1, the Office asserted that one or more chain coded

blocks corresponding to (i.e., overlying) a mouth, for example, in image 1311 are used to identify one or more smaller-sized chain coded blocks corresponding to part or all of a mouth in image 1313.

However, in contrast to claim 1, Bonneau does not disclose or suggest that the one or more blocks corresponding to the mouth in image 1313 are processed according to a detection algorithm selected from among plural detection algorithms based on a condition associated with the blocks of image 1311. On the contrary, Bonneau utilizes the same detection algorithm for the processing of the chain coded blocks in image 1309, the processing of the chain coded blocks in image 1311, and the processing of the chain coded blocks in image 1313. In particular, Bonneau discloses that edge detection processing is independently performed for each of images 1309, 1311 and 1313 to determine a Holder exponent h for the blocks in each image, respectively. Bonneau discloses that edges within one or more blocks of image 1311 are then matched with one or more blocks of image 1313, if the respective blocks satisfy a specific threshold for their respective Holder exponent h . In particular, Bonneau discloses that when the edge blocks are chain coded, the blocks which do not contain edges or have a small modules value are eliminated because only edges over a specified threshold are chain coded (see Column 21, lines 38-42).

Accordingly, Bonneau does not disclose or suggest that a detection algorithm is selected from among plural detection algorithms for processing the blocks in image 1313 (or images 1311 or 1309, for that matter). On the contrary, Bonneau discloses that the same algorithm, i.e., edge detection based on Holder exponents h , is utilized for processing all the blocks in images 1309, 1311 and 1313.

Furthermore, Bonneau does not disclose or suggest that a detection algorithm is selected from among plural detection algorithms for processing the blocks in image 1313 based on a condition associated with the blocks in image 1311 identified at the second resolution (scale). Bonneau does not disclose or suggest that a detection algorithm is selected based on any condition associated with the blocks in image 1311. On the contrary, Bonneau discloses that the same edge detection algorithm is used for processing the blocks in images 1309, 1311 and 1313, independent of any condition associated with any blocks in an image of a lower

resolution, e.g., images 1309, 1311. Bonneau does not disclose or suggest that an algorithm for processing any of the blocks in image 1313 has any relationship to a condition of blocks in image 1311 (or image 1309), because the same algorithm is used for processing all the blocks in images 1309, 1311 and 1313.

Therefore, Applicants respectfully submit that Bonneau does not disclose or suggest processing an image at a second resolution to identify an object in the image at the second resolution, and processing the image using the object identified in the image at the second resolution to identify another object according to a detection algorithm selected from among plural detection algorithms based on a condition associated with the object identified at the second resolution, as recited in claim 1.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that Bonneau does not disclose or suggest all the recited features of claim 1.

Consequently, Applicants respectfully submit that claim 1 is patentable over Bonneau.

II. 35 U.S.C. § 103(a) Rejections

Dependent claims 4, 5 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bonneau in view of Hsu (U.S. 5,631,970). Further, dependent claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bonneau in view of Eppler (U.S. 6,084,989).

As demonstrated above, Bonneau does disclose or suggest all the recited features of claim 1. Namely, Bonneau does not disclose or suggest that an image is processed at a second resolution to identify an object in the image at the second resolution, and the image is processed at a first resolution using the identified object to obtain another object according to a detection algorithm selected from among plural detection algorithms based on a condition associated with the object identified at the second resolution, as recited in claim 1.

Hsu and Eppler each fail to disclose or suggest this feature of claim 1. Consequently, Hsu and Eppler do not cure the deficiencies of Bonneau for failing to disclose or suggest all the recited features of claim 1.

Therefore, no obvious combination of Bonneau, Hsu and Eppler would result in the subject matter of claim 1, since Bonneau, Hsu and Eppler, either individually or in combination, do not disclose or suggest all the recited features of claim 1.

Dependent claims 2-9 and 50-52 recite further distinguishing features over the applied references. The foregoing explanation of the patentability of independent claim 1 is sufficiently clear such that it is believed that separately arguing the patentability of the dependent claims is unnecessary at this time. However, Applicants reserve the right to do so if it becomes appropriate.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that claim 1, as well as claims 2-9 and 50-52 which depend therefrom, are patentable over the applied references.

III. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. Accordingly, Applicants request a favorable examination and consideration of the instant application.

If, after reviewing this Amendment, the Examiner believes there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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